

BUILDING 707 CLOSURE PROJECT

WASTE MANAGEMENT PLAN

Prepared by:

Kaiser-Hill D&D Projects

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

>> INCLUDES D&D SUMMIT ASSUMPTIONS <<

DRAFT 4

May 2000



ADMIN RECORD
B707-A-000013

Reviewing
Official: *Laura J. Dunn* *upu*

Date: 11-02-00

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DRAFT 4

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Reviewed and Approved by:

Xxxx, B707 Closure Project Manager

Date

Xxxx, B707 Environmental Compliance Manager

Date

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Date

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LIST OF ACRONYMS

AB	Authorization Basis
ACM	Asbestos-Containing Materials
AEA	Atomic Energy Act
ALLW	Asbestiform Low-Level Waste
ARAR	Applicable or Relevant & Appropriate Requirements
CCR	Code of Colorado Regulations
CDD	Closure Description Document
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CHWA	Colorado Hazardous Waste Amendments
CHWR	Colorado Hazardous Waste Regulations
D&D	Decontamination & Decommissioning
DOE	Department Of Energy
DOP	Decommissioning Operations Plan
DOT	Department Of Transportation
ECT	Environmental Compliance Team (Building 707)
EDP	Economic Disposition Plan
EPA	Environmental Protection Agency
FY	Fiscal Year
IDC	Item Description Code
ISU	Interim Status Units
IWCP	Integrated Work Control Package
LDR	Land Disposal Restricted
LLM	Low Level Mixed waste
LLW	Low Level Waste
LSA	Low Specific Activity
nCi/g	nanoCuries per gram
NCR	Non-conformance Report
NRC	Nuclear Regulatory Commission
NRWOL	Non-Routine Waste Origination Log
NTS	Nevada Test Site
pCi/g	picoCuries per gram
PCB	Polychlorinated Biphenyl
PEP	Project Execution Plan
PPE	Personal Protective Equipment
QAPjP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Clean-up Agreement
RFETS	Rocky Flats Environmental Technology Site
RLCR	Reconnaissance Level Characterization Report
ppm	parts per million
SCO	Surface Contaminated Object
SME	Subject Matter Expert
SNM	Special Nuclear Materials
SWB	Standard Waste Box
TRM	Transuranic Mixed waste
TRU	Transuranic waste
TSCA	Toxic Substances Control Act
TU	Treatment Unit
WAC	Waste Acceptance Criteria
WEMS	Waste and Environmental Management System
WGI	Waste Generating Instruction
WGS	Waste Generator Support
WIPP	Waste Isolation Pilot Plant
WSRIC	Waste Stream and Residue Identification and Characterization

1.0 INTRODUCTION AND PURPOSE

The Building 707 Cluster includes Building 707 and several ancillary buildings, trailers and structures. Its primary mission during the Cold War was the manufacturing processes originally performed in Building 776/777. Operations were divided into eight categories: casting, forming, metallurgy, machining, assembly, inspection, and non-destructive testing of plutonium parts and associated support services. With suspension of nuclear production operations at RFETS in 1989, and the subsequent discontinuation of the production mission in 1992, the Building 707 Cluster was transitioned from a nuclear weapons production facility into an environmental restoration facility. Since that time, Building activities have been re-directed to support Site closure, including:

- Completion of mission risk reduction activities, such as residue stabilization (ash and salts) and oxide stabilization; and
- Completion of deactivation activities in preparation for decommissioning, including removal of special nuclear material (SNM) and classified matter; shipment of metal components, declassification of classified molds and/or tools by shape alteration; and removal of loose equipment, combustibles, chemicals, and organic liquids.
- Core activities, as necessary, to support day-to-day operations and to ensure compliance.

The Building 707 Cluster is now scheduled for Decommissioning between 2000 and 2006 under the Building 707 Decommissioning Operations Plan (DOP) (Ref. 1) to be approved by the Colorado Department of Public Health and Environment (CDPHE). Except for holdup in piping, gloveboxes and ventilation ducts, Special Nuclear Material and Residues will have been removed from the facility as part of previous risk reduction and deactivation activities prior to decommissioning. Decommissioning will generate liquid and solid radioactive waste, mixed waste, hazardous waste (RCRA, TSCA), and sanitary waste (including special sanitary – ACM). Each waste type must be managed in accordance with applicable State and Federal regulations, relevant Site Waste Management procedures, applicable Waste Acceptance Criteria (WAC) and Applicable or Relevant and Appropriate Requirements (ARARs) for each waste type. This Waste Management Plan describes how that waste will be managed to ensure the safety of the public, the worker, and the environment.

The purpose of this plan is twofold.

- (1) To identify the volume, type, and volume generation rate for each waste type that will be produced during facility closure, especially those waste streams which do not currently have an identified disposal path.
- (2) To direct the reader to the applicable regulatory requirements, plans, procedures and instructions that will be employed to ensure waste management compliance. These management practices will affect work associated with waste characterization and sampling, treatment, packaging, and interim staging and storage for shipment to disposal.

2.0 SCOPE OF WMP

2.1 General Description

This plan describes the anticipated waste and how it will be managed in the decommissioning of the Building 707 cluster. It identifies the existing approved Site procedures for managing both routine and non-routine waste to ensure compliance with regulatory requirements, DOE Orders, and Rocky Flats Environmental Technology Site (RFETS) policies and standards.

The Building 707 Cluster at the RFETS includes Building 707 (and 707A), Building 778 and the ancillary support buildings and structures. These include trailers, cooling towers, maintenance and utility structures, and tank systems. This former plutonium component manufacturing facility is scheduled for decommissioning per the Building 707 DOP, to be approved by the CDPHE.

2.2 Project Execution

To facilitate the planning and execution of the decommissioning, the facility was subdivided into Modules and areas, representing logical groupings of areas or equipment in the same geographical areas within a building or within the cluster. The decommissioning of these Modules and areas will generate waste that must be appropriately managed to minimize risk to the public, worker and the environment. Approximately 15,268 m³ of low-level waste, 91 m³ low-level mixed waste, and 1,325 m³ of TRU- and TRU-mixed waste will be generated from this project, excluding the building shell and ancillary structures. The 707 cluster building shells and internal structures are expected to contribute an additional 75,260 m³ of construction debris. The amount of debris disposed as sanitary waste will be minimized through the use of recycling structural steel for shipment off-site, and clean concrete for use as fill material on-site. All wastes will be stored at least temporarily at RFETS pending shipment to the appropriate disposal sites. While Section 4 shows the estimated total waste quantities per waste category and over the duration of the project, the waste estimates are based upon the waste generated by each Set, using **POWERtool**, a decommissioning project management software package.

2.3 Deactivation/Decommissioning Interface and Waste Management Strategy

The waste management approach for deactivation and decommissioning is discussed in Section 6.0 of the Building 707 DOP (Ref. 1).

3.0 Project Organization

The Building 707 Decommissioning Project is part of the Building 707 Facility Closure activities under the Building 707 Closure Project Management Plan (Ref. 5). Due to the accelerated schedule to meet the closure goals, the Building 707 Decommissioning Project must perform activities in tandem with other activities under the Building 707 Closure Project Management Plan, including: routine facility management (Landlord), Risk Reduction, and Deactivation activities. This is described in the Building 707 DOP (Ref. 1).

3.1 Project Interface with DOE and Stakeholders

The interaction and responsibilities of Building 707 Closure Project Manager, DOE RFFO, Regulators, and stakeholders are described in the Building 707 DOP (Ref. 1).

3.2 Project Team Organization Structure

The Building 707 Closure Project is structured and managed to provide for easily maintained schedule and cost controls. These controls assist the Closure Project Manager in ensuring that targeted costs and schedule are met. The real-time controls identify changes as requirements dictate, not when the milestone/project has been completed and costs have already exceeded the target. This approach provides a format to meet the DOE RFFO philosophy, which puts worker safety first, constructs outcome-oriented projects, provides better management and control of finances, and focuses technology.

The project team, under the direction of a Closure Project Manager, is an integrated group of qualified individuals from the contractor and a number of subcontractors. The project team will not duplicate activities provided by site infrastructure organizations, but will coordinate those activities with the appropriate personnel. Individual roles and responsibilities are described below, and as shown in Figure 3-1.

- 3.1.1 Closure Project Manager – the senior leader of the Building 707 Closure Project; has the responsibility for cost, scope, schedule, authorization basis (AB), safety and compliance, and material stewardship. The Closure Project Manager assigns responsibilities of tasks to appropriate team, and communicates strategic plans for the B707 Closure Project to all team managers to assure understanding of expected performance standards.
- 3.2.2 Decommissioning Manager – reports to the Closure Project Manager; has the responsibility for managing the decommissioning effort, maintaining the Building 707 Project Execution Plan (PEP) and prepares necessary decommissioning plans and reports, e.g., Reconnaissance Level Characterization Report (RLCR), DOP.
- 3.2.3 Closure Planning Team – Reports to the Closure Project Manager; has the responsibility for maintaining time-phased plans for decommissioning activities, estimating and tracking decommissioning cost, generating and submitting long-term waste generation rates, and developing decommissioning waste projection

data to support waste forecasting. The closure planning team also coordinates sampling and characterization needs, as required.

3.2.4 Decommissioning Waste Team – Reports to the Decommissioning Manager as follows:

- Request Waste Generating Instructions (WGIs) from the Waste Generator Support (WGS) organization
- Correct waste container Non-Conformance Reports (NCRs)
- Maintain Waste and Environmental Management System (WEMS)
- Receive new waste containers
- Coordinate shipments of full waste containers
- Provide RCRA/Waste generator qualification training
- Perform packaged waste inspection

3.2.5 Decommissioning Teams (Waste Generating Organizations) – Reports to the Decommissioning Manager, and are responsible for the following waste activities:

- Assure adequate preliminary planning of proposed work activities
- Assure that workers are waste generator qualified
- Assure thorough understanding of WGI before beginning any activity that requires waste packaging
- Perform waste packaging as directed in the applicable WGI

3.2.6 Environmental Compliance Team – Supports the Decommissioning Manager as follows:

- Review/comment on IWCP work packages
- Support the WGS in development of WGIs by providing waste characterization data
- Administer Chemical Management
- Coordinate analytical sampling for waste characterization activity
- Inspect waste storage areas
- Provide RCRA/Waste generator qualification training
- Coordinate tours of external audits/inspections
- Maintain waste/environmental operating record
- Waste storage area management

3.2.7 Waste Generator Support Organization – Supports the Decommissioning Manager as follows:

- Develop WGIs as requested by the Building 707 Decommissioning Manager and decommissioning Waste Team
- Perform acceptance inspection of waste containers awaiting shipment
- Coordinate RFETS storage of Building 707 waste awaiting final disposal

3.2.8 Technical Support (Training) – Supports the Decommissioning Manager as follows:

- Maintain training records for all decommissioning personnel
- Notify decommissioning personnel of necessary training

- Provides training contact names and phone numbers for the specific courses
- 3.2.9 Waste Systems (Site Organization) – Supports the Decommissioning Manager as follows:
- Maintains waste characterization data and waste management systems (WSRIC, NRWOL, WEMS)
- 3.2.10 Waste Operations Organization (Site Organization) – Supports the Decommissioning Manager as follows:
- Arrange packaged waste shipping from Building 707
 - Receive packaged waste from Building 707 and prepare for final transportation and disposal
- 3.2.11 Non-Destructive Assay (NDA)– Supports the Decommissioning Manager as follows:
- Supplies NDA requirements to the project
 - Performs NDA of waste containers and provides analytical results
- 3.2.12 Liquid Waste Treatment – Supports the Decommissioning Manager as follows:
- Supplies Liquid Waste Treatment acceptance criteria information as needed
 - Receives and treats acceptable liquid wastes through existing site liquid waste treatment systems

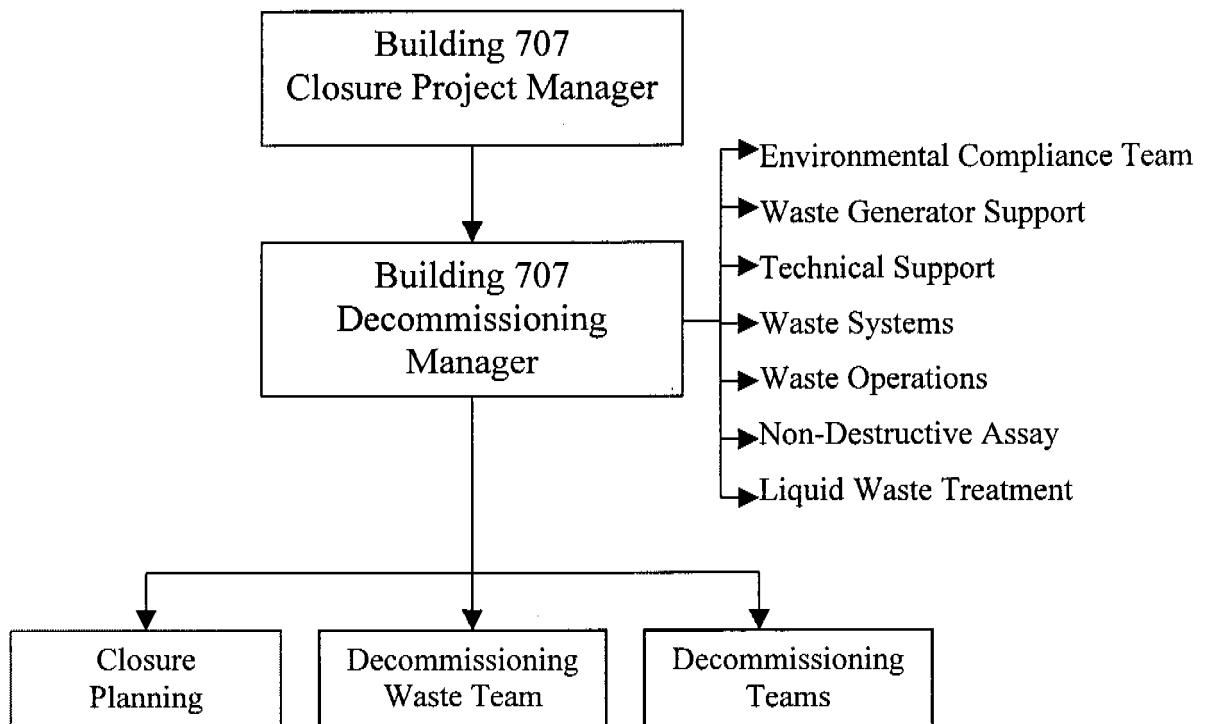


Figure 3-1 Building 707 Decommissioning Waste Organization

4.0 WASTE ESTIMATE

4.1 Waste Estimate Method Description

The waste estimate for the decommissioning of the Building 707 Cluster is based on actual data taken from the decommissioning of Building 779. As each plutonium building and cluster is unique in function and design, the different categories of equipment which make each cluster unique and could also be quantified are established as metrics for estimation. The equipment categories chosen for the Building 779 waste metrics are gloveboxes, ducts, pipe, debris, and miscellaneous equipment. The in-place metrics are combined with the WEMS actual waste generation data from Building 779 to generate factors that are multiplied by similar metrics for Building 707 to estimate the waste generation.

The waste estimate (and cost estimate) for the decommissioning of the Building 707 Cluster has been performed using a project management program called **POWERtool**. In **POWERtool** the cluster is divided into work "Sets" and then further subdivided into Subsets (Electrical, Internal GB equipment, External Piping, tanks, etc.), Tasks (characterization, decontaminate, disassembly, size reduction, etc.) and Subtasks (specific to the primary task). **POWERtool**'s strength lies in not estimating resources and waste volume for each individual piece of equipment, but in recognizing similarities between equipment types and assuming the differences will average out. Therefore, in **POWERtool**, the number of items for each equipment type is counted and waste unit conversion is used to calculate the waste volume. These waste unit conversions are based on the actual data obtained from decommissioning the Building 779 Cluster.

For the waste categories not represented in Building 779 (e.g. tanks), a waste volume estimate based upon volume, size reduction and packing density is performed. A more detailed description of the waste estimate methodology for the Building 707 Cluster, including the assumptions used, is in Appendix A.

4.2 Waste Estimate Improvements

One of the primary assumptions of the waste estimate methodology is that the same techniques used in B779 to decontaminate, dismantle, and package the decommissioning waste will be used in the other Plutonium buildings. As Building 779 was the first plutonium building to be decommissioned, decontamination, size reduction and waste packaging improvements have already been identified from the lessons learned. As these improvements are implemented in the Building 707 Cluster, the actual waste generated for the various equipment categories will be evaluated to ensure the waste estimate reflects what is actually occurring in the building.

Additional advantages to estimating and monitoring work progress through **POWERtool** and the Set structure is the ability to improve the waste estimate while work in the building is ongoing. When a work Set is completed, the actual waste data from that Set is analyzed to improve the waste estimate based upon implementation of new methods and technologies.

4.3 Description of Waste Categories

The waste categories shown in Table 1, as well as additional waste related definitions, are defined in Appendix B.

4.4 Summary Waste Estimate

The estimated volume of waste to be generated from the decommissioning of the Building 707 Cluster is shown in Table 1 by each of the waste categories. The number and type of each container is also estimated for each waste type based upon the number of waste containers generated in the decommissioning of B779.

Table 4-1 - Waste Breakout

Category	Sub-Category	UNITS	CONTAINER ¹ (# & type)	As-shipped Volume/Wt
TRU	TRU	M ³	1,075 55-gallon 431 SWB	225.2 cu m 820.5 cu m
	TRM	M ³	92 55-gallon 95 SWB	19.3 cu m 180.9 cu m
	Residue	M ³	10 55-gallon	2.1 cu m
	TRU-Liquid ²	M ³	0	0 cu m
Low-Level	Low-Level (inc. ACM)	M ³	2,762 55-gallon 16 SWB 448 Full Metal	578.6 cu m 30.5 cu m 1,421 cu m
	LLW-Structural Debris	M ³	723 Full Metal	2,293 cu m
	Surface Contaminated Objects	M ³	301 Cargo	10,015 cu m
	Contaminated Recycle Metal ³	M ³	0	0 cu m
	LLW-Liquid ²	M ³	1 55 gallon	0.2 cu m
Low-Level Mixed	LLM-RCRA	M ³	389 55-gallon	81.5 cu m
	LLM-TSCA (PCBs)	M ³	8 55-gallon	1.7 cu m
	LLM-Liquid ²	M ³	21 10-gallon 8 55-gallon	0.8 cu m 1.7 cu m
Non-Rad/ Regulated				
(Hazardous/ CERCLA)	RCRA	M ³	19 55-gallon	4.0 cu m
	CERCLA	M ³	0	0 cu m
	TSCA (PCB)	M ³	33 55-gallon	6.9 cu m
	TSCA (Friable Asbestos)	M ³	56 55-gallon	11.7 cu m
	Hazardous-Liquid ²	M ³	2 10-gallon 2 55-gallon	0.1 cu m 0.4 cu m
Sanitary	Routine Sanitary	Tons	0	0 tons
	Non-Routine Sanitary	Tons	598 cargo	6,058 tons
	Rubble/Structural Construction Debris (non-routine)	Tons	0	0 tons
	Non-friable asbestos/Spec. Sanitary	Tons	6 cargo	22.5 tons
Other	Salvage/PU&D (pieces/volume) ⁴	M ³	0	0 cu m
	Rubble/Structural Construction Debris (non-routine)	Tons	1,660 cargo	55,232 cu m
	Radioactive test/calibration sources	Pieces	0	0 cu m
	Non-contaminated Scrap Metal/Other Recycled Materials	Tons	0	0 cu m

Note: Each WMP may substitute sub-categories with the approval of Decommissioning Projects

¹ Table rows should be expanded to include each container type; i.e. a row for drums, SWBs, and 10-drum overpacks for TRU.

² Liquids wastes generated must be treated/stabilized/solidified prior to disposal. Normal units will be as-treated waste container volume ready for disposal. Bulk liquids (e.g. decontamination solutions to 374) should be provided as separate value (in liters).

³ LLM and Hazardous metals also may be recycled via metal melt or other recycle vendors; however, since these quantities should be relatively small, all radioactive/hazardous recycled materials should be rolled up through this LLW sub-category. The purpose of this roll-up is to ensure that LLW, which can be economically recycled counts against LLW metrics, or if recycled options are not realized, the materials are still accounted for. This material should not be double counted under the other recycled materials sub-category.

⁴ Salvage/PU&D given in short tons, pieces (as required by PU&D), and volume equivalent if determined later to be more cost effectively disposed of as LLW.

4.6 Waste Generation Schedule

As the waste estimate is performed by Set, it is possible to take the waste generated by Set for each of the major waste categories and spread it by the current schedule. This yields the waste generation rate estimate as shown in Table 2. The first portion of Table 2 shows the waste generation by quarter for Fiscal Years 2000 and 2001, and the second portion shows the projected waste generation by fiscal year. The current schedule is based on the closure projects baseline.

Table 2- Waste Generation Rate Estimate

Project Waste Generation ¹	FY 00 3 rd Q	FY 00 4 th Q	FY 01 1 st Q	FY 01 2 nd Q	FY 01 3 rd Q	FY 01 4 th Q	FY 02 1 st Q	FY 02 2 nd Q
TRU (M ³)	0	0	46	58	81	148	164	150
TRM (M ³)	0	0	9	11	15	29	31	29
LLW (M ³)	0	0	620	697	595	510	552	1,150
LLM (M ³)	0	0	4	4	4	3	3	7
Other (M ³)	0	0	2	2	2	2	2	4
Sanitary (Tons)	0	0	0	0	0	0	0	0

Project Waste Generation ²	FY 00	FY01	FY02	FY03	FY04	FY05	FY06
TRU (M ³)	0	333	493	219	0	0	0
TRM (M ³)	0	63	94	43	0	0	0
LLW (M ³)	0	2,422	7,578	4,310	0	0	0
LLM (M ³)	0	14	42	24	0	0	0
Other (M ³)	0	8	22	20	0	0	0
Sanitary (Tons)	0	0	0	732	5,349	0	0

¹ Estimates should be given in quarters for the current fiscal year (FY) and the next FY (FY+1). Generation for future years (FY+2 and on) should be given on a yearly basis.

² Waste generation rate estimates should be coordinated with activities in the project schedule for a mature project.

5.0 Waste Characterization, Sampling, Generation, Packaging and Disposition

Waste generated during decommissioning will be categorized as follows: TRU/TRM, LLW/LLM, Non-Radiological Regulated (i.e. RCRA-, TSCA-regulated), and Sanitary. These categories may be further subdivided based on disposition and management pathways. The majority of the waste generated during decommissioning will be managed and dispositioned through established plans, procedures and operating instructions, as described in Sections 5.1 through 5.5. The remaining wastes, termed "Orphan Waste" do not have a current disposition (treatment and/or disposal) pathway and will be managed as described in Section 5.6.

Table 3 summarizes the waste management steps required for management of the wastes generated during decommissioning. Those waste streams with defined disposition paths are grouped together under the major waste category. Specifics are provided in Table 3 only for the Orphan Waste generated from the decommissioning of the Building 707 Cluster.

5.1 TRU/TRM

TRU and TRM are generated primarily during initial decommissioning of Building 707 as the gloveboxes, glovebox internal equipment, and ducting are removed. TRU and TRM are regulated under the Atomic Energy Act (AEA), the Rocky Flats Cleanup Agreement (RFCA- Ref. 2), WIPP RCRA Part B Permit (Ref.3), the Colorado Hazardous Waste Regulation 6 CCR 1007-3 (Ref.7), the Site RCRA Permit, and various compliance and consent orders. TRU and TRM are managed on-Site under the TRU Waste Management Manual **1-MAN-008-WM-001** (Ref. 6), and the RFETS Site TRU Waste Characterization Program Quality Assurance Project Plan **95-QAPJP-0050 Revision 4** (Ref. 8). These plans address the applicable requirements and criteria pertaining to sampling, characterization, packaging, storage, and certification of each defense TRU waste package to be shipped to WIPP.

The majority of the TRU and TRM generated during decommissioning will be characterized using acceptable process knowledge as described under Section B4 - TRU Waste Characterization Using Acceptable Knowledge of the RFETS Site TRU Waste Characterization Program Quality Assurance Project Plan **95-QAPJP-0050 Revision 4** (Ref. 8). This section includes the following requirements necessary for characterization by Acceptable Knowledge to be satisfactory for disposal at WIPP.

- Section B4-2 Acceptable Knowledge Documentation
- Section B4-3a Qualifications and Training Requirements
- Section B4-3b Acceptable Knowledge Assembly, Compilation and Confirmation Procedures and Required Administrative Controls
- Section B4-3c Criteria for Assembling an Acceptable Knowledge Record
- Section B4-3d Requirements for Confirmation of Acceptable Knowledge
- Section B4-3e Acceptable Knowledge Data Quality Requirements

As stated in Section B4-3b of the RFETS Site TRU Waste Characterization Program Quality Assurance Project Plan **95-QAPJP-0050 Revision 4** (Ref. 8), the following are the three primary documents used to assemble the acceptable knowledge:

1-MAN-036-EWQA Waste Characterization Program Manual
4-H19-WSRIC-001 WSRIC Characterization and Reverification
PRO-484-WIPP-003 Collection, Review, and Confirmation of Acceptable Knowledge

Building knowledge and acceptable knowledge requirements must be fully understood to generate adequately characterized waste ready for disposition to WIPP. PRO-484-WIPP-003 requires Acceptable Knowledge Data Collectors (Subject Matter Experts – SMEs) be identified to perform the acceptable knowledge characterization and ensure the appropriate method of acceptable knowledge confirmation is implemented.

The TRU and TRM waste streams anticipated to be produced from decommissioning are described in WSRIC Bldg 707 (Ref.10) WSRIC Bldg D&D: Process D&D-03 Low Level and Transuranic Non –Hazardous Waste Streams (Ref.11) and Process D&D-04 Low Level and Transuranic Mixed Waste Streams (Ref.12).

5.2 Low Level/Low Level Mixed Waste

Low Level waste generated during the decommissioning of the Building 707 cluster is expected to fall within the Surface Contaminated Object (SCO) procedures if non-porous, or the Low Specific Activity (LSA) procedures if porous. LLW is regulated under the Atomic Energy Act (AEA) and RFCA, and controlled on-Site by the Low Level/Low Level Mixed Waste Management Plan (**94-RWP/EWQA-0014**) (Ref.13), which addresses applicable requirements and criteria pertaining to sampling, characterization, packaging, certification, and storage of each LLW/LLM package. Rad-contaminated Friable Asbestos is additionally regulated under the Colorado Air Quality Control Commission Regulation 8 (Ref.15), and on-site under the Asbestos Waste Management Plan (**1-10000-TRM-WP-2401**) (Ref.16).

RCRA Hazardous LLM waste is additionally regulated under the Colorado Hazardous Waste Regulation 6 CCR 1007-3 (Ref.7), the Site RCRA Part B Permit (Ref.20), various compliance and consent orders, RFCA and where applicable, is managed on-site by the Environmental / (Ref.9) Guidance Documents. TSCA regulated LLM waste regulated as both LLW and is additionally regulated under the Toxic Substance Control Act (TSCA). Rad-contaminated PCB waste is additionally regulated on-site under Environmental / Waste Compliance Guidance Document #32 (Ref.9).

The LLW and LLM waste streams anticipated to be produced from decommissioning are described in Bldg D&D: Process D&D-03 Low Level and Transuranic Non –Hazardous Waste Streams and Process (Ref.11) D&D-04 Low Level and Transuranic Mixed Waste Streams (Ref.12).

5.3 Hazardous Waste Non-Rad (RCRA Regulated)

Although RFCA defines the demolition waste to be CERCLA-regulated, some wastes generated during decommissioning may be managed as RCRA-Hazardous wastes, and regulated under the Colorado Hazardous Waste Regulation 6 CCR 1007-3, the Site RCRA Permit, various compliance and consent orders, and RFCA. Hazardous waste is staged in "90-day" storage areas, and stored in permitted Site storage areas unless specific Treatment Units (TUs) are identified for this purpose and coordinated with the appropriate regulatory organizations. The Non-Radioactive Hazardous waste streams

anticipated to be produced from decommissioning are described in WSRIC Bldg D&D: Process D&D-02 Non-Radioactive Hazardous Waste (Ref.14). The waste is managed on-site by the Environmental / Waste Compliance Guidance Documents (Ref.9).

5.4 TSCA Regulated Waste Non-Rad

PCB and Asbestos wastes are regulated under the Toxic Substance Control Act (TSCA). PCB waste is regulated on Site under Environmental / Waste Compliance Guidance Document #32 (Ref.9). Friable asbestos waste is additionally regulated under Colorado Air Quality Control Commission Regulation 8 (Ref.15), and on Site under the Asbestos Waste Management Plan (1-10000-TRM-WP-2401) (Ref.16).

5.5 Sanitary Waste

Sanitary waste is currently classified (based on Site procedures) in three categories: (1) Routine – e.g. normal office trash, (2) Non-Routine – e.g. construction debris, and (3) Special – e.g. non-friable asbestos, petroleum-contaminated media. The demolition of the Building 707 Cluster is expected to produce mostly Non-Routine materials, after segregating recycled concrete and recycled metal. Sanitary waste is managed under the Sanitary Waste Management Plan (1-10000-EWQA-1.4) (Ref.17) and Sanitary Offsite Disposal Procedure (1-PRO-573-SWODP) (Ref.18).

5.6 Orphan Wastes

Orphan Wastes include those wastes that cannot be readily disposed of. The primary disposal paths for radioactive wastes are as follows:

Waste Isolation Pilot Plant (WIPP)

- ◆ SNM which is processed to meet TRU/TRM waste requirements prior to Decommissioning
- ◆ TRU Waste
- ◆ TRM LDR compliant and no free liquids (liquids require a RCRA site treatment permit)

Nevada Test Site

- ◆ LLW <100 nanoCuries/gram (nCi/g), no free liquids
- ◆ LLW-Friable Asbestos <100 nCi/g

Envirocare of Utah

- ◆ LLM (RCRA hazardous) < 10 nCi/g, Land Disposal Restricted (LDR) compliant, and no free liquids (liquids require a RCRA site treatment permit)

Therefore, the Orphan Wastes would include the following:

Potential SNM: SNM discovered after operations are dismantled leaving no treatment path. Identified as TRU or TRM that are similar to residues currently being treated in residue processing.

Potential SNM with Free Liquid: SNM containing free liquids and requires an unidentified RCRA permitted site treatment path. Identified as TRU or TRM liquids and sludge that are similar to residues currently being treated.

TRM and LLM with Free Liquid: TRM or LLM containing free liquids and requires an unidentified RCRA permitted site treatment path. Identified as TRM or LLM liquids and sludge.

LLM with No Disposal Pathway: LLM containing greater than 10 nCi/g and having no disposal path. Identified as waste streams producing TRM or LLM, and are assumed to generate some LLM greater than 10nCi/g.

LLM with No Disposal Pathway and Not LDR Compliant: LLM containing greater than 10 nCi/g and having no disposal path, and also requiring RCRA permitted treatment to meet LDR. Identified as waste streams producing TRM or LLM (assumed to generate some LLM greater than 10nCi/g), are indicated to not meet LDR, and do not have a treatment path.

LLM with No Disposal Pathway and Free Liquid: LLM containing greater than 10 nCi/g and having no disposal path, and also requiring RCRA permitted treatment to process free liquid. Identified as waste streams producing TRM or LLM (assumed to generate some LLM greater than 10nCi/g), and identified as liquids or sludge.

LLM and Not LDR Compliant: LLM that does not meet LDR and requires RCRA permitted treatment to meet LDR. Identified as LLM that does not meet LDR.

LLW PCBs: LLW containing PCBs greater than 50 parts per million (ppm) and requiring treatment.

LLM with PCBs: LLW containing both RCRA hazardous waste not meeting LDR, and PCBs greater than 50 ppm, requiring both treatment under RCRA and TSCA.

5.7 Waste Summary

Building 707 specific operations and WSRIC documents(Ref.10) were reviewed as well as WSRIC general D&D documents (Ref.11) to determine the possible waste streams which will be generated from the decommissioning of the Building 707 cluster. Those waste streams that do not require treatment, or have a designated treatment or disposal path will be managed under existing site plans and procedures and do not require additional waste management planning as shown in Table 3 under the heading "Waste with Designated Treatment Path or Disposal Site." Those wastes that meet the definition of Orphan wastes in Section 5.6 are also included in the Table 3, under the respective headings.

As the orphan wastes are listed and quantified in Table 3, it makes it possible to begin planning and identifying possible treatment and disposition pathways as early in the process as possible. Any orphan waste that is generated before a disposition pathway is identified and activated, must be stored on site pending treatment and/or disposal.

Table 3 Waste Management Summary

Column 1	2	4	5	7	8	8a	9	10
Waste Stream Description	Rad/ Non-Rad	RCRA/TSCA regulated?	Regulatory Exemptions	Packaging & On-Site Management Requirements	Designated Onsite Treatment or Offsite Waste Management Facility	Secondary/Tertiary Waste streams	Special WAC Rqmts	Estimated Waste Volume Cum
Waste with Designated Treatment Path or Disposal Site								
TRU Waste Combustibles, Plastic, Glass, Gloveboxes and parts, Filters, Light metal, Raschig Rings, Debris, GB Floor Sweepings, Insulation, Misc. Inorganic solids, Graphite molds	Rad TRU	No	None	TRU Waste Management Manual, Rev3 1-MAN-008-WM-001 TRU Waste Characterization Program Quality Assurance Project Plan (QAPJP), Rev4 95-QAPJP-0050	No Treatment WIPP	Secondary Containment Personal Protective Equipment (PPE)	Per WIPP WAC	See Tables 1 & 2
TRM Waste Combustibles, Plastic, Glass, Gloveboxes and parts, GB Parts with Lead (Line), Lead GB Gloves, Raschig Rings, Misc. Inorganic solids, Misc. Organic solution	Rad TRU	RCRA Various	None	TRU Waste Management Manual, Rev3 1-MAN-008-WM-001 CHWR 6 CCR 1007-3 TRU Waste Characterization Program (QAPJP), Rev4 95-QAPJP-0050	No Treatment WIPP	Secondary Containment PPE	Per WIPP WAC	See Tables 1 & 2
LLW Combustibles, Plastic, Glass, Gloveboxes and parts, Benelex, Raschig Rings, Filters, Light metal, Debris, GB Floor Sweepings, Insulation, Misc. Inorganic solids	Rad LLW	No	None	LLLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014	No Treatment NTS GTS Duratek	PPE	Per NTS WAC	See Tables 1 & 2
LLM (RCRA) Combustibles, Glass, Lead, Glass, Gloveboxes and parts, GB Parts with Lead (Line), Lead Aprons, Light metal, Raschig Rings, Misc. Inorganic solids, Misc. Organic Sludge, Graphite molds	Rad LLW	RCRA Various	None	LLLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	No Treatment Envirocare	PPE	Per Envirocare WAC	See Tables 1 & 2
LLM (TSCA) - Asbestos	Rad LLW	TSCA	None	LLLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Asbestos Waste Management Plan 1-10000-TRM-WP-2401	No Treatment NTS	PPE	Per NTS WAC	See Tables 1 & 2 (included with LLW)
LLW-Beryllium Contaminated	LLW	DOE	None	LLLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014	LL/LLM Waste Management Plan, Rev2 94-RWP/EWQA-0014	PPE	Per NTS WAC	See Tables 1 & 2 (included with LLW)

Column 1	2	4	5	7	8	8a	9	10
Waste Stream Description	Rad/ Non- Rad	RCRA/TSCA regulated?	Regulatory Exemptions	Packaging & On-Site Management Requirements	Designated Onsite Treatment or Offsite Waste Management Facility	Secondary/ Tertiary Waste streams	Special WAC Rqmts	Estimated Waste Volume Cu m
RCRA Fluorescent light bulbs, Leaded Window (unused), Leaded GB Gloves (unused), Lead (Non-line), Lead Acid/ NiCd/Hg Batteries, Hg Bulbs, Scrap x-ray Film, Hg, Switches and Thermometers, Misc. solutions and chemicals	No	RCRA Various	None	Environmental / Waste Compliance Guidance Documents	Bethlehem Apparatus Chem Waste Mgmt Safety-Kleen Salesco Trade Waste Incin.	PPE	Per LDR	See Tables 1 & 2
TSCA - PCBs Leaking/non-leaking ballast and capacitors, PCB Oils, PCB Debris, PCB Transformers	No	TSCA PCBs	None	TSCA Waste Management Plan 1- 10000-EWQA	S.D. Myers Safety-Kleen Salesco Chem Waste Mgmt	PPE	Per TSCA	See Tables 1 & 2
TSCA - Friable Asbestos	No	OSHA Asbestos	None	Asbestos Waste Management Plan 1-10000-TRM-WP-2401	Front Range Landfill, Chem Waste Mgmt	PPE	None	See Tables 1 & 2
Sanitary	No	No	None	Sanitary Waste Management Plan 1-10000-EWQA-1.4 Sanitary Offsite Disposal Proc. 1- PRO-573-SWODP	No Treatment Front Range Landfill	None	Per Proc. 1-PRO- 573- SWODP	See Tables 1 & 2
Potential SNM								
Misc. Inorganic Sludge (Line) D&D-3-66 IDC 299	Rad TRU	None	None	TRU Waste Management Manual, Rev3 1-MAN-008-WM-001 TRU Waste Characterization Program (QAPJP), Rev4 95-QAPJP-0050	Treatment Required TBD WIPP	PPE, residuals	Potential SNM	0 - 0.0018 cu m (0 - 2 8801 cans)
Metal Fines IDC 151	Rad TRU	None	None	TRU Waste Management Manual, Rev3 1-MAN-008-WM-001 TRU Waste Characterization Program (QAPJP), Rev4 95-QAPJP-0050	Treatment Required TBD WIPP	PPE, residuals	Potential SNM	0 - 0.0054 cu m (0 - 6 8801 cans)
Potential SNM with Free Liquid								
Glovebox Sludge 707-36-67 IDC 332	Rad TRU	RCRA F001, F002	None	TRU Waste Management Manual, Rev3 1-MAN-008-WM-001, TRU Waste Characterization Program (QAPJP), Rev4 95-QAPJP-0050	Treatment Required TBD (Wet Combustibles Program B371) WIPP	PPE, residuals	Potential SNM & No free liquid	0.0018 - 0.00135 cu m (2 - 15 8801 cans)

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Column 1	2	4	5	7	8	8a	9	10
Waste Stream Description	Rad/ Non- Rad	RCRA/TSCA regulated?	Regulatory Exemptions	Packaging & On-Site Management Requirements	Designated Onsite Treatment or Offsite Waste Management Facility	Secondary/ Tertiary Waste streams	Special WAC Rqmts	Estimated Volume Cu m
TRM / LLM with Free Liquid								
Glovebox Liquids 707-36-69 IDC 533	Rad TRU	RCRA F001, F002	None	TRU Waste Management Manual, Rev3 1-MAN-008-WM-001 TRU Waste Characterization Program (QAPIP), Rev4 95-QAPIP-0050	Treatment Required TBD WIPP	PPE, residuals	No free liquid	1.67 cu m 8 55-gallon drums each containing 14 4-liter bottles (112 bottles total)
Hazardous Waste / Excess Chemicals Liquid 707-36-22 (also D&D-4-28) IDC 544	Rad LLW	RCRA F001, F002, Various D- codes	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare or others through excess chemicals program	PPE, residuals	No free liquid	1.05 - 4.19 cu m (5 - 20 55-gallon drums)
Hazardous Waste / Excess Chemicals Liquid D&D-4-27 IDC 544	Rad TRU	RCRA F001, F002, Various D- codes	None	TRU Waste Management Manual, Rev3 1-MAN-008-WM-001 TRU Waste Characterization Program (QAPIP), Rev4 95-QAPIP-0050	Treatment Required TBD WIPP or others through excess chemicals program	PPE, residuals	No free liquid	<0.0379 cu m (0 - 1 10-gallon drum)
Misc. Basic Waste Solution (Non-Line) D&D-4-38 IDC 527	Rad LLW	RCRA D002 and various	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required LWTF Envirocare	None	No free liquid	0.0189 cu m (place holder - <5 gallons)
Misc. Organic Sludge (Non- Line) D&D-4-44 IDC 531	Rad LLW	RCRA Various	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD	None	No free liquid	0 - 0.21 cu m (<1 55-gallon drum)
LLM with No Disposal Pathway -> 10 nCi/g								
Leaded Window 707-36-27 (and D&D-4-18) IDC 444	Rad TRU LLW	RCRA D005, D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	No Disposal Site	None	None	0.21 cu m (place holder - 1 55-gallon drum)
Dry Combustibles D&D-4-1 IDC 330	Rad TRU LLW	RCRA Various	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	No Disposal Site	None	None	0 - 0.42 cu m (0 - 2 55-gallon drums)
Plastics (Haz, Line) D&D-4-7 IDC 337	Rad TRU LLW	RCRA Various	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	No Disposal Site	None	None	0.21 cu m (1 55-gallon drum)
Glass (Haz, Line) D&D-4-12 IDC 440	Rad TRU LLW	RCRA Various	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	No Disposal Site	None	None	0.21 cu m (1 55-gallon drum)

Column 1	2	4	5	7	8	8a	9	10
Waste Stream Description	Rad/ Non- Rad	RCRA/TSCA regulated?	Regulatory Exemptions	Packaging & On-Site Management Requirements	Designated Onsite Treatment or Offsite Waste Management Facility	Secondary/ Tertiary Waste streams	Special WAC Rqmts	Estimated Waste Volume Cu m
Solid Excess/Expired Chemicals (Line) D&D-4-29 IDC 545	Rad TRU LLW	RCRA Various	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	No Disposal Site	None	None	0.0379 cu m (1 10-gallon drum)
Full-Flo Filters (Line) D&D-4- 33 IDC 331	Rad TRU LLW	RCRA Various	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	No Disposal Site	None	None	0.21 cu m (placeholder - 1 55-gallon drum)
Raschig Rings D&D-4-56 IDC 856	Rad TRU LLW	RCRA Various F- listed	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	No Disposal Site	None	None	0 - 0.42 cu m (0 - 2 55-gallon drums)
LLM with No Disposal Pathway - >10 nCi/g and Not LDR Compliant								
Leaded Glovebox Gloves 707-36-12 (and D&D-4-16) IDC 339	Rad TRU LLW	RCRA D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD No Disposal Site	None	None	0.21 - 1.05 cu m (1 - 5 55-gallon drums)
Lead (Line) D&D-4-20) IDC 321	Rad TRU LLW	RCRA D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD No Disposal Site	None	None	0.21 - 1.05 cu m (1 - 5 55-gallon drums)
Glovebox Parts with Lead (Line) D&D-4-24 IDC 488	Rad TRU LLW	RCRA D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD No Disposal Site	None	None	0 - 15.2 cu m (0 - 8 SWBs)
LLM with No Disposal Pathway - >10 nCi/g and Free Liquid								
Misc. Organic Waste Sol'n (Line) D&D-4-39 (Non-Line) D&D-4-40 IDC 527	Rad TRU LLW	RCRA Various	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required LWTF No Disposal Site	None	No free liquid	0 - 0.0379 cu m (0 - 1 10-gallon drum)
Misc. Inorganic Sludge (Line) D&D-4-45 (Non-line) D&D-4-46 IDC 299	Rad TRU LLW	RCRA Various	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD No Disposal Site	None	No free liquid	0.21 cu m (1 55-gallon drum)
LLM - Not LDR Compliant								
Lead (Non-line) 707-36-32 IDC 321	Rad LLW	RCRA D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	1.05 - 4.19 cu m (5 - 20 55-gallon drums)

Column 1	2	4	5	7	8	8a	9	10
Waste Stream Description	Rad/ Non- Rad	RCRA/TSCA regulated?	Regulatory Exemptions	Packaging & On-Site Management Requirements	Designated Onsite Treatment or Offsite Waste Management Facility	Secondary/ Tertiary Waste streams	Special WAC Rqmts	Estimated Waste Volume Cu m
Lead 707-36-43 IDC 321	Rad LLW	RCRA D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	21 – 31.5 cu m (100 – 150 55- gallon drums)
Lead Acid Batteries 707-36-70 IDC 321	Rad LLW	RCRA D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	0.21 cu m (1 55-gallon drum)
Ni-Cd Batteries D&D-4-49 and D&D-4-50 IDC 480	Rad LLW	RCRA D002, D006	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	0 – 0.01 cu m (0 – 2 gallons)
Hg Batteries D&D-4-51 and D&D-4-52 IDC 480	Rad LLW	RCRA D002, D009	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	0 – 0.01 cu m (0 – 2 gallons)
Benelex with Lead (D&D-4-54 IDC 302	Rad LLW	RCRA D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	< 33.3 cu m (< 1 IP2)
Leaded Glovebox Gloves 707-36-48 IDC 339	Rad LLW	RCRA D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	0.21 – 2.1 cu m (1 – 10 55-gallon drums)
Mercury Bulbs 707-36-28 IDC 440	Rad LLW	RCRA D008, D009	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	0 – 0.21 cu m (0 – 1 55-gallon drums)
Glovebox Lead Shielding 707-36-1 IDC 488	Rad LLW	RCRA D008	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	0 – 15.2 cu m (0 – 8 SWBs)
Fluorescent Bulbs (Broken) 707-36-29 (and D&D-4-31) IDC 855	Rad LLW	RCRA D009	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	0 – 0.21 cu m (0 – 1 55-gallon drums)
Scrap X-ray Film D&D-4-58 IDC 337	Rad LLW	RCRA D011	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	<0.0379 cu m (0 – 1 10-gallon drum)

Column 1	2	4	5	7	8	8a	9	10
Waste Stream Description	Rad/ Non-Rad	RCRA/TSCA regulated?	Regulatory Exemptions	Packaging & On-Site Management Requirements	Designated Onsite Treatment or Offsite Waste Management Facility	Secondary/ Tertiary Waste streams	Special WAC Rqmts	Estimated Waste Volume Cu m
Mercury Switches & Thermometers	Rad LLW	RCRA D009	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents	Treatment Required TBD Envirocare	None	None	<0.0379 cu m (0 – 1 10-gallon drum)
LLW PCBs with Free Liquids								
PCB Oils with RCRA Metals (Non-line) D&D-4-35) IDC 970	Rad LLW	TSCA PCBs RCRA Various D-codes	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 Environmental/Waste Comp Guidance Documents TSCA Waste Management Plan 1-10000-EWQA	Treatment Required TBD No Disposal Facility	None	None	<0.0379 cu m (Place holder – 0 – 1 10-gallon drum)
LLW PCBs								
Oil Contaminated with PCBs D&D-3-43 IDC 529	Rad LLW	TSCA PCBs	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 TSCA Waste Management Plan 1-10000-EWQA	No Disposal Facility	None	None	<0.0379 cu m (Place holder – 0 – 1 10-gallon drum)
PCB Debris D&D-3-44	Rad LLW	TSCA PCBs	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 TSCA Waste Management Plan 1-10000-EWQA	No Disposal Facility	None	None	0.21 cu m (placeholder – 1 55-gallon drum)
PCB Transformers D&D-3-45 IDC 972	Rad LLW	TSCA PCBs	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 TSCA Waste Management Plan 1-10000-EWQA	No Disposal Facility	None	None	0.21 cu m (placeholder – 1 55-gallon drum)
Leaking/Non-Leaking Ballast and Capacitors D&D-3-74 IDC 973	Rad LLW	TSCA PCBs	None	LL/LLM Waste Management Plan, Rev2, 94-RWP/EWQA-0014 TSCA Waste Management Plan 1-10000-EWQA	No Disposal Facility	None	None	0.21 – 1.05 cu m (1 – 5 55-gallon drums)

Column 3 – Process/Remediation Waste was removed from the table as all Decommissioning waste are remediation waste.

6.0 Pollution Prevention and Waste Minimization

Waste minimization and recycling will be integrated into the planning and management of the process and remediation waste generated during facility component removal, size reduction, and decontamination activities. Unnecessary generation of sanitary, hazardous, LL/LLM, TRU/TRM, and PCB wastes will be controlled using work techniques that prevent the contamination of areas and equipment; preventing unnecessary packaging, tools, and equipment from entering radiological contaminated areas; and reusing contaminated tools and equipment, when practical.

Standard decontamination operations and processes will be evaluated for waste minimization, and suitable minimization techniques will be implemented.

6.1 TRU/TRM Waste Decontamination and Size Reduction

Each TRU/TRM waste stream must be evaluated to determine whether it is practicable to be adequately decontaminated to be disposed of as LLW/LLM. Decontamination methods may include any physical methods, including (but not limited to) wiping, scraping, grinding, scabbling, chemical stripping, etc. Where decontamination is not practicable, the waste will be size reduced using various cutting techniques. Where possible, efficient waste packaging will be employed to maximize the amount of waste in a given waste container.

6.2 LLW/LLM Size Reduction and Compaction (*From B707 PEP*)

In most cases, it will not be cost effective to reduce the amount of Low Level or Low Level Mixed Waste (LLW/LLM) by decontamination for free release. Therefore, waste minimization efforts will focus on:

- Segregation of waste (e.g. lead will be separated from components to minimize the amount of LLM and/or RCRA waste that is generated.
- Recycling of metal waste when economically beneficial.
- Efficient packaging and/or compaction of waste, to maximize the amount of waste in a given waste disposal container.
- The project team will consult with the Pollution Prevention organization in the planning phases for Hazard Reduction and Decommissioning to determine if other waste minimization techniques can be economically employed.

6.3 Surface Contaminated Objects (SCO)

The surface contaminated object program is useful to both minimizing TRU/TRM waste and facilitating management of LLW/LLM. Those pieces of equipment with a localized hotspot, which may have been managed as TRU/TRM waste, are evaluated under the SCO program and may be categorized as LLW/LLM.

LLW/LLM debris meeting the SCO criteria is more readily dispositioned, since multiple Item Description Codes (IDCs) may be disposed of as SCO.

6.4 Debris Management

Debris generated during the decommissioning of Building 707 will be managed to minimize the volume of waste that must be disposed of in rad- or RCRA-permitted landfills. This will be accomplished by decontaminating building structure and disposing

of a significantly smaller quantity of radiological or RCRA-contaminated material, and using the remaining material as construction fill material on-site.

6.5 Sanitary Waste

Though sanitary waste disposal is the most cost effective end point for the wastes generated, the quantity of sanitary waste will be minimized as much as possible. The primary waste streams targeted for sanitary waste minimization include building rubble and debris. Where practical, radioactive and hazardous waste contamination on building surfaces will be removed through scabbling, scraping, sand blasting and other physical removal operations. The remaining building structure, whether removed or demolished is then available for recycle (e.g. steel) or reuse on site for cover material (e.g. concrete).

6.6 Material Recycling (From RSOP Section 3.8)

Property with radiological or chemical contamination may be reused or recycled on site, off site by other DOE facilities, or by publicly or privately owned facilities that have proper authorization for receiving such property.

Recycling options that may be considered for wastes generated during facility component removal, size reduction, and decontamination activities are listed in Table 4. Materials will be recycled based on availability of appropriate recycle technologies, availability of approved facilities, and cost effectiveness.

Table 4. Material Recycling Options

Waste Stream	Recycle Option	Comments
Scrap metal (not radioactively contaminated and not considered hazardous in accordance with RCRA)	Recycled through approved scrap metal vendors or via contract.	Material must meet receiving facility's WAC.
Radioactively contaminated scrap metal	Recycled by means of metal melt process vendors or contract.	Material must not exceed contamination types and levels identified in the receiving facility's WAC.
Mixed scrap material (radioactively contaminated scrap metal mixed with hazardous constituents)	None	Currently trying to locate and approve facilities that can manage this type of waste.
Building rubble/debris	Reuse on site as backfill	Must meet release criteria established in the RSOP for Recycling Concrete.
Wiring and other electrical components.	Recycled through approved commercial facilities.	Material must not exceed contamination types and levels identified in the receiving facility's WAC.
Bulk plastics and glass	Recycled through approved commercial facilities.	Material must not exceed contamination types and levels identified in the receiving facility's WAC.
Used lead acid batteries	Recycled through approved commercial recycling facilities	Material must meet receiving facility's WAC.
Used oil	Recycled through approved commercial fuel blending facilities.	Material must meet receiving facility's WAC.

7.0 References

1. Building 707 Closure Project Decommissioning Operations Plan (DOP), Draft Dated May 15, 2000
2. Rocky Flats Cleanup Agreement (RFCA), July 1996, PADC-1998-00779
3. Waste Isolation Pilot Plant RCRA Part B Permit
4. Closure Plan for Interim Status Units (ISU) at the Rocky Flats Environmental Technology Site (ISU Closure Plan), Dated
5. Building 707 Closure Project Management Plan (PMP), Dated
6. TRU Waste Management Manual, Revision 3, 12/9/99, 1-MAN-008-WM-001
7. Colorado Hazardous Waste Regulations (CHWR), 6-CCR-1007-3
8. RFETS Site TRU Waste Characterization Program Quality Assurance Project Plan 95-QAPjP-0050 Revision 4
9. Environmental / Waste Compliance Guidance Documents
10. WSRIC Bldg. 707: Process 36, D&D Waste Streams, PADC-93-01482
11. WSRIC Bldg. D&D: Process D&D-03, Low Level and Transuranic Non-hazardous Waste Streams, PADC-1997-00931
12. WSRIC Bldg. D&D: Process D&D-04, Low Level and Transuranic Mixed Waste Streams, PADC-1997-00932
13. Polychlorinated Biphenyl Management Plan, 1-PRO-673-EWQA-1.5
14. WSRIC Bldg. D&D: Process D&D-02, Non-radiological Hazardous Waste Streams, PADC-1997-00930
15. Colorado Air Quality Control Commission Regulation 8
16. Asbestos Waste Management Plan, 1-10000-TRM-WP-2401, July 1992, PADC-92-00545
17. Sanitary Waste Management Plan, 1-10000-EWQA-1.4, September 1992, PADC-1993-00338
18. Sanitary Offsite Disposal Procedure, 1-PRO-573-SWODP, September 1998, PADC-1997-01054
19. Economic Disposition Plan used for the Building 779 Closure Project, December 1997
20. RFETS RCRA Part B Permit, February 1999, PADC-1994-00166

APPENDIX A – BASIS OF ESTIMATE (WASTE ESTIMATION)

The waste estimate for the Building 707 cluster is based on the actual waste generation data from the decommissioning of the Building 779 cluster. As Buildings 707 and 779 are significantly different in design and function, the data could not realistically be used on a direct building to building basis (e.g. square footage of building). Therefore, the specific metrics that make each building unique were identified and obtained from walkdown data and drawing take-offs to make the waste estimate. These metrics include gloveboxes (direct waste and secondary waste), ducts, piping, tanks (internals, direct waste, and secondary waste), plenums, large building-specific equipment, building-specific debris, and the remaining stripout and debris waste.

The actual waste generation data for the Building 779 cluster is available through the site Waste and Environmental Management System (WEMS). The data was sorted by waste category and into specific equipment groupings. The data was further divided into "before and after" May 10, 1999, to account for waste generated during glovebox removal and waste generated after glovebox removal was complete, respectively. It is assumed that all waste (except debris, chemicals and solutions) generated prior to May 10, 1999 is related to glovebox decommissioning. It is further assumed that all combustible waste generated prior to May 10, 1999 is secondary waste produced from the decommissioning of the gloveboxes.

The waste generated from decommissioning of the Building 779 gloveboxes is summarized in Table A1, and the waste from decommissioning the remainder of the building is shown in Table A2.

As actual waste generation data from duct and piping could not be obtained through WEMS, the waste travelers produced during Building 779 decommissioning were reviewed to estimate the actual quantity of waste generated from duct and pipe removal. This is shown in Table A3.

The equipment within Plenum Building 782 was removed after all other work in the cluster was completed. This makes it possible to estimate the amount of waste generated from decommissioning of building plenums. It was assumed that all waste except combustibles, plastic and debris generated between December 6, 1999 and February 18, 2000 would be plenum waste from Building 782. This is shown in Table A4.

The Building 779 Actual Waste Generation data (TRU/M and LL/M only) for each of the equipment categories is summarized in Table A5.

The equipment-in-place metrics are obtained from the original Building 779 estimate, Glovebox data tables, Building 782 drawings, and the master list of building areas. It is important to note that while the TRU and LLW glovebox metrics represents the glovebox volumes in-place, the split between TRU and LLW is based on the actual determination of whether the glovebox was TRU or LLW. The Building 707 walkdown data was collected in POWERtool. Through various database sorts of the data, the metric data

corresponding to the Building 779 data was obtained and all of the metric data is shown in Table A6.

The waste estimate for Building 707 by equipment category is summarized in Table A7. This method assumes that once all of the building specific equipment is removed, the buildings can be compared on a floor area basis for the remaining waste generation.

Table A1 Building 779 Glovebox Actual Waste Generation Data

IDC	WASTE DESCRIPTION	WASTE		Through May 1999	
		Category	Vol cu m	Wt Lb	
480	GLOVEBOXES ONLY	LLW	130.10	154,028.20	
488		LLM	17.13	13,460.70	
824		TRU	91.64	104,495.80	
5001		TRM	52.12	37,575.60	
		TOTAL	241.09	274,333.30	
0339	LEADED DRYBOX GLOVES,NAC	LLM	0.21	261.0	
		TRM	3.14	2,130.0	
		TOTAL	3.35	2,391.0	
0321	LEAD	LLM	15.09	26,888.9	
		TRM	0.42	693.0	
		TOTAL	15.51	27,581.9	
0302	BENEFLEX & PLEXIGLASS	LLW	0.84	465.3	
		TRU	5.03	2,561.9	
		TOTAL	5.87	3,027.2	
0440	GLASS (GROUND/LEADED)	LLW	3.35	3,447.1	
0444		LLM	2.97	3,571.0	
0855		TRU	1.47	951.0	
		TRM	1.26	1,128.0	
		TOTAL	9.05	9,097.1	
480	GLOVEBOX ASSOICATED EQUIPMENT	LLW	1,036.48	625,224.80	
488	AND PARTS (Not gloves, glass, Lead,	LLM	7.81	6,019.80	
824	Beneflex & Plexiglas, Combustibles)	TRU	9.62	6,890.70	
5001		TRM	5.20	3,844.00	
		TOTAL	1,109.01	677,206.30	
0337	PLASTIC	LLW	185.01	40,465.9	
0825		TRU	32.95	7,666.6	
0833		TRM	0.21	47.0	
0863		TOTAL	218.17	48,179.5	
0335	FILTERS	LLW	28.31	3,209.9	
0490		TRU	7.77	1,233.1	
0491		TOTAL	36.08	4,443.0	
0330,0336	COMBUSTIBLES - DRY, WET, TRU, TRM	LLW	300.17	68,248.5	
0821,0822	SECONDARY WASTE	LLM	0.04	0.0	
0831		TRU	15.72	5,626.2	
0861		TRM	0.21	72.0	
0862		RES	0.21	43.8	
		TOTAL	316.34	73,990.5	
ALL	TOTAL GLOVEBOX RELATED	LLW	1,684.26	895,089.7	
	DECOMMISSIONING WASTE	LLM	43.25	50,201.4	
		TRU	164.20	129,425.3	
		TRM	62.56	45,489.6	
		RES	0.21	43.8	
		TOTAL	1,954.47	1,120,249.8	
ALL	GLOVEBOXES	TRU/M	196.00	158,482.00	
	GLOVEBOXES	LL/M	198.00	205,332.10	
	GLOVEBOX SECONDARY WASTE	TRU/M	16.14	5,742.00	
	GLOVEBOX SECONDARY WASTE	LL/M	485.22	108,714.40	
	GLOVEBOX ASSOCIATED WASTE	TRU/M	14.83	10,734.70	
	GLOVEBOX ASSOCIATED WASTE	LL/M	1,044.29	631,244.60	

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**Table A2 Building 779 Actual Waste Generation Data
Everything Except Gloveboxes**

IDC	WASTE DESCRIPTION	WASTE Category	TOTAL PROJECT	
			Vol cu m	Wt Lb
0321	LEAD	LLM	1.47	2,781.70
		TOTAL	1.47	2,781.70
0442	LEACHED RASCHIG RINGS	LLW	4.19	5,335.00
		TRU	0.21	78.00
		TOTAL	4.40	5,413.00
330,336,821 822,831,861 862	COMBUSTIBLES - DRY, WET, TRU,TRM	LLW	231.11	59,695.60
		TRU	2.31	854.00
		TOTAL	233.42	60,549.60
MIX	STRIPOUT WASTE - NOT SCO Glass, plastic, filters, metal, insulation, misc. inorganic solids, TSCA, bulbs, heavy non-ss metal, graphite molds	LLW	456.31	196,796.1
		LLM	1.54	766.9
		LLT	0.84	201.0
		TRU	165.34	67,860.3
		TRM	0.21	12.0
		RES	0.42	56.1
		HAZ	1.89	3,179.0
		TSC	10.11	8,766.0
		TOTAL	636.66	277,637.4
5001	MIXED IDCS - SCO	LLW	4,605.07	2,294,888.5
		TOTAL	4,605.07	2,294,888.5
0374	BLACKTOP, CONCRETE, DIRT, & SAND	LLW	1,303.09	1,090,827.2
		TRU	0.21	237.0
		TOTAL	1,303.30	1,091,064.2
0503, 0505 0523, 0527 0529, 0544 0545, 1505 1526, 1544 1545	WASTE SOLN, SOLIDS, CHEMICALS	LLW	0.57	387.0
		LLM	1.88	307.7
		TRU	0.21	29.0
		TRM	0.42	223.2
		HAZ	0.40	193.0
		TOTAL	3.48	1,139.9
TOTAL	TOTAL STRIPOUT AND DEBRIS WASTE	LLW	6,600.34	3,647,929.40
		LLM	4.89	3,856.30
		LLT	0.84	201.00
		TRU	168.28	69,058.30
		TRM	0.63	235.20
		RES	0.42	56.10
		HAZ	2.28	3,372.00
		TSC	10.11	8,766.00
		TOTAL	6,787.79	3,733,474.30
TOTAL	TOTAL STRIPOUT WASTE	TRU/M	168.69	69,056.50
	TOTAL STRIPOUT WASTE	LL/M	5,302.98	2,561,159.50
	TOTAL DEBRIS WASTE	TRU/M	0.21	237.00
	TOTAL DEBRIS WASTE	LL/M	1,303.09	1,090,827.20

**Table A3 Building 779 Actual Waste Generation Data
Duct and Pipe**

	DUCT		Pipe	
	Volume cu m	Weight lb	Volume cu m	Weight lb
LLW-TOTAL	987.00	427,907.8	391.00	183,326.4
IDC 480	35.52	21,303.0	25.69	15,552.15
IDC 5001	749.67	320,363.62	305.62	149,532.10
IDC-Misc	201.81	86,241.2	59.69	18,242.2
TRU-TOTAL	101.00	34,678.3	15.00	5,213.7
IDC 824	42.36	14,543.73	13.99	4,862.71
IDC-Misc	58.64	20,134.56	1.01	351.01
TOTAL	1,088.00	462,586.1	406.00	188,540.1

**Table A4 Building 779 Actual Waste Generation Data
Building 782 Plenum**

IDC	LLW		LLM		TRU		Total	
	cu m	Lb	cu m	Lb	cu m	Lb	cu m	Lb
480	11.63	11,825.2	0.21	52.9	3.81	1,410.7	15.65	13,288.8
490	25.37	4,488.5	0.00	0.0	13.33	2,400.6	38.70	6,889.1
491	0.42	49.0	0.00	0.0	0.00	0.0	0.42	49.0
532	15.51	22,944.0	0.00	0.0	0.00	0.0	15.51	22,944.0
824	0.00	1.0	0.00	0.0	5.71	3,132.9	5.71	3,133.9
5001	1,094.71	536,308.6	0.00	0.0	0.00	1.0	1,094.71	536,309.6
Total	1,147.64	575,616.3	0.21	52.9	22.84	6,945.2	1,170.70	582,614.4

**Table A5 Building 779 Actual Waste Generation Data
Summary of All Equipment Categories**

Equipment Category	TRU/M cu m	LL/M cu m
Gloveboxes	196.0	198.0
Glovebox Sec Waste	16.1	485.2
Glovebox Assoc Equip.	14.8	1,044.3
Ductwork	101.0	987.0
Piping	15.0	391.0
B782 Plenum	22.8	1,147.9
Misc. Stripout Waste	29.9	2,777.1
Debris Waste	0.2	1,303.1
Total	395.9	8,333.6
	Cu m	MT
Sanitary Waste		6,080.8
Recycle	55,201.2	

Table A6 Building 779 and 707 Waste Generation In-Place Metrics

Item Description	Waste Category	Metric Units	B779 Metrics	B707 Metrics
Gloveboxes	TRU/TRM	Cubic metes	157	797
Gloveboxes	LLW/LLM	Cubic meters	159	491
Gloveboxes (sec.)	TRU/TRM	Square meters	682	3,038
Gloveboxes (sec.)	LLW/LLM	Square meters	726	1,873
Ductwork	TRU/TRM	Square feet	15,288	13,118
Ductwork	LLW/LLM	Square feet	64,197	55,083
Piping	TRU/TRM	Lineal feet	0	11,715
Piping	LLW/LLM	Lineal feet	36,775	63,512
Conduit *	TRU/TRM	Lineal feet	0	0
Conduit*	LLW/LLM	Lineal feet	36,775	142,319
Tank Raschig Rings**	TRU/TRM	Cubic metes	72	0
Tank Raschig Rings**	LLW/LLM	Cubic meters	12	0
Tanks**	TRU/TRM	Cubic metes	198	3.2
Tanks**	LLW/LLM	Cubic meters	3	50.4
Tank Sec. Waste**	TRU/TRM	Cubic metes	198	3.2
Tank Sec. Waste**	LLW/LLM	Cubic meters	3	50.4
Plenums (B782)	TRU/TRM	Cubic meters	Use LLW	885.8
Plenums (B782)	LLW/LLM (all)	Cubic meters	613	885.8
Building Area	LLW/LLM	Square feet	76,039	161,820

* As no conduit metric was available for Building 779, the B779 piping metric and actual waste generation was used for the B707 conduit estimate

** As no tank data was available from B779, the tank estimate data from B771 was used.

Table A7 B707 Waste Estimate Summary

Item Description	B779 Metrics		B779 Actual cu m	B707 Metrics		B707 Actual cu m
Gloveboxes - TRU/M	157	cu m	196	797	cu m	729
Gloveboxes - LL/M	159	cu m	198	491	cu m	611
GB Sec waste-TRU/M	682	sq m	53	3,038	sq m	238
GB Sec waste-LL/M from TRU GB	682	sq m	384	3,038	sq m	1,712
GB Sec waste - LL/M from LL GB	726	sq m	96	1,873	sq m	248
GB Sec waste - LL/M Total			480			1,960
Ductwork - TRU/M	15,288	sq ft	101	13,118	sq ft	97.9
Ductwork - LL/M	64,197	sq ft	987	55,083	sq ft	127
Piping - TRU/M	0	lin ft	15	11,715	lin ft	125
Piping - LL/M	36,775	lin ft	391	63,512	lin ft	668
Conduit - TRU/M	ND		ND	0	lin ft	0
Conduit - LL/M	ND		ND	142,319	lin ft	1,513
Tank Raschig Rings - TRU/M *	72	cu m	72	0.0	cu m	0.0
Tank Raschig Rings - LL/M *	12	cu m	12	0.0	cu m	0
Tanks - TRU/M*	198	cu m	198	3.2	cu m	3
Tanks - LL/M *	3	cu m	3	50.4	cu m	52
Tanks Sec Waste - TRU/M *	198	cu m	181	3.2	cu m	3
Tanks Sec Waste - LL/M *	3	cu m	3	50.4	cu m	53
Plenum Waste - TRU/M	613		23	885.8	cu m	33
Plenum Waste - LL/M	613		1,148	885.8	cu m	1,659
Stripout (Misc) TRU/M	76,039	sq ft	7	161,820	sq ft	16
Stripout (Misc) LL/M during GB Rem	76,039	sq ft	1,051	161,820	sq ft	2,237
Stripout (Misc) LL/M after GB Rem	76,040	sq ft	2,777	161,820	sq ft	2,738
TRU/M Debris	76,041	sq ft	0	161,820	sq ft	0
LL/M Debris	76,039	sq ft	1,303	161,820	sq ft	2,773
Total - TRU/M			396			1,245
Total - LL/M Stripout			7,032			11,618
Total - LL/M Debris			1,303			2,773
Total - LL/M			8,335			14,391

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Waste Estimate Assumptions

For this waste estimate the following assumptions were used.

- The actual waste data obtained from the decommissioning of Building 779 will be used as the basis for the decommissioning of the other Plutonium buildings.
- Applying the lessons learned from the decommissioning of Building 779 will result in improved methods of decontamination, dismantling, and packaging. Based on this assumption, the glovebox packaging volume will be reduced by 73% through the use of in-situ and thermal cutting. (1500 lb per box increase over the 1100 lb per box observed in B779)
- The actual waste data volumes used from Building 779 include the volume of the container, which is consistent with waste disposal.
- All gloveboxes that were put into operation are assumed to be TRU/TRM waste until characterized prior to decommissioning.
- All Building 779 waste generated prior to May 10, 1999 is assumed to be glovebox related waste.
- All Building 779 combustible waste generated prior to May 10, 1999 is assumed to be secondary waste generated from glovebox decommissioning.
- All Zone 1 Duct will be managed as TRU/M Waste
- All Zone 2 Duct will be managed as LLW/LLM Waste
- Duct that is 2" to 6" diameter has a surface area of 1.57 sf/lf, and duct that is 6" to 12" has a surface area of 3.14 sf/lf
- All lead will be stripped from the gloveboxes and packaged separately. All lead-coated pieces which cannot be stripped will be removed to the smallest possible piece and packaged separately.
- Once the gloveboxes, duct, pipe/conduit, tanks and other function specific equipment is removed from the buildings, the remaining waste is comparable on a building floor area basis.
- Low level ACM waste, whether friable or non-friable will be disposed of at NTS and will be included in the total LLW value.
- The following waste category breakouts were used for waste estimation by waste category (based on the actual volume data from Building 779 decommissioning):
 - ◆ TRM Waste is 15.94% of the TRU/TRM waste

- ◆ Residue Waste is 0.16% of the TRU/TRM waste.
 - ◆ TRU Liquids are 0.0% of the TRU/TRM waste
 - ◆ LLW is 14.09% of the LLW/LLM.
 - ◆ LL Structural Debris is 15.92% of the LLW/LLM.
 - ◆ LLW Surface Contaminated Objects is 69.4% of the LLW/LLM.
 - ◆ LLW-Liquid is 0.0% of the LLW/LLM.
 - ◆ LLM-RCRA is 0.56% of the LLW/LLM.
 - ◆ LL-TSCA (PCB) is 0.01% of the LLW/LLM.
 - ◆ LLM-Liquid is 0.02% of the LLW/LLM.
 - ◆ Hazardous waste is 0.027% of the total Waste.
 - ◆ TSCA-PCB waste is 0.04% of the Total Waste.
 - ◆ Friable Asbestos is 0.07% of the Total Waste.
 - ◆ Hazardous Liquid is 0.0022% of the Total Waste.
- The percentage of each container type used for each waste category is based on the actual waste container use in the Building 779 decommissioning.
- Sanitary Waste generation is based on estimates from the SEA factored to include data from B779.

APPENDIX B – WASTE DEFINITIONS

Asbestos

Asbestiform varieties of chrysolite, amosite (cummintonite-grunerite), crocidolite, anthophyllite, tremolite, and actinolite.

Asbestos Containing Material, Non-Regulated – Non-Friable Asbestos

Material containing less than 1% asbestos by weight that when dry can be crumbled or reduced to powder by hand pressure.

Asbestos Containing Material, Regulated – Friable Asbestos

Material containing more than 1% asbestos by weight that when dry can be crumbled or reduced to powder by hand pressure. This includes all non-friable asbestos that is or has the potential to become friable during decommissioning operations (including grinding, sawing, chipping, burning).

Low-Level Waste (LLW)

Low Level waste is any waste contaminated with transuranic elements (e.g. plutonium and americium) at a level of specific activity less than 100 nanocuries per gram (nCi/g) of waste, or wastes contaminated with nonfissile uranium in any quantity. No minimum level of radioactivity has been specified for LLW, and LLW may be solid or liquid.

LLW-Friable Asbestos

Low Level waste containing more than 1% friable asbestos by weight (see Low Level Waste and Regulated Asbestos Containing Material)

Low-Level Mixed Waste (LLM)

Low Level waste mixed with hazardous waste is referred to as low-level mixed waste. This may include solid or liquid wastes. See Low Level Waste, RCRA Hazardous Waste, and TSCA Hazardous Waste.

LLW-Contaminated Recycle Metal

Metal scrap that is both metal that is recycled is currently exempt from the management requirements of Subtitle C per the Federal Register dated January 4, 1985, 50 FR 614, and 261.6 (a)(3)(ii). Even though scrap metal is exempt from the hazardous waste requirements this exemption only applies if the metal is recycled.

LLW-Structural Debris

Debris produced from the demolition of the building structure, typically including concrete, bricks, steel support and rebar.

LLW-Surface Contaminated Objects (SCO)

As defined by 49 CFR 173.403

LLW-TSCA (PCB)

LLW contaminated with PCBs. See Low Level Waste and various PCB Waste definitions.

Non-Routine Sanitary Waste – Waste which may be disposed of in a sanitary landfill and typically generated by construction, demolition, remediation, and maintenance activities. This can include: Concrete, concrete masonry, asphalt, dirt and soil, brick, block, sheet metal and structural metal, HVAC duct, wall board, piping (steel, plastic, copper, fiberglass, brass), doors, lumber, wood, framing material, non-recyclable materials, electrical wiring, cable, conduit, trees, glass, weeds, large or bulky items, clothing and textile.

PCB Bulk Product Waste

Waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal was >50 ppm PCBs. PCB bulk product waste excludes PCBs or PCB Items, but includes: 1) non-liquid bulk waste or debris from the demolition of buildings and other man-made structures; 2) PCB-containing waste from the shredding of automobiles, household appliances, or industrial appliances 3) plastics; preformed or molded rubber parts and components, applied dried paints, varnishes, waxes, or other similar coatings or sealant; caulking; adhesives; paper, Galbestos; sound-deadening or other types of insulation; and felt or fabric products such as gaskets; 4) fluorescent light ballast containing PCBs in the potting material.

PCB Item

Any PCB Article, Article Container, PCB Container, or PCB Equipment, that deliberately or unintentionally contains, or has as a part of it, any PCB or PCBs. This category includes electrical equipment such as transformers, capacitors and switches.

PCB Remediation Waste

Waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: (1) materials disposed of prior to May 18, 1978, that are currently at concentrations ≥ 50 ppm PCBs, regardless of the concentration of the original spill; (2) materials which are currently at any volume or concentration where the original source was ≥ 500 ppm PCB beginning on May 18, 1978, or ≥ 50 ppm beginning on July 2, 1979; and (3) materials which are currently at any concentration if the PCBs are from a source not authorized for use under 40 CFR Part 761.

PCB remediation waste includes soil, rags, and other debris generated as a result of any PCB spill cleanup, including, but not limited to the following: (1) environmental media containing PCBs, such as soil and gravel; dredged materials, such as sediments; settled sediment fines, and aqueous decantate from sediment; (2) sewage sludge containing <50 ppm PCBs and not in use according to §760.20(a) [relating to uses of sewage sludge regulated under Parts 257, 258, and 503 of 40 CFR]; (3) PCB sewage sludge, commercial or industrial sludge contaminated as a result of a spill of PCBs including sludge located in or removed from any pollution control device, and aqueous decantate from an industrial sludge; and (4) buildings and other man-made structures, such as concrete or wood floors or walls contaminated from a leaking PCB or PCB-contaminated transformer, porous surfaces and non-porous surfaces.

RCRA Hazardous Waste

Hazardous waste is any solid waste that either exhibits a hazardous characteristic (i.e., ignitable, corrosive, reactive, or toxic) or is named on one of three lists published by the Environmental Protection Agency (EPA) in 40 CFR 261, Identification and Listing of Hazardous Waste. To be considered hazardous, a waste must first meet EPA's definition of "solid waste," which includes liquids.

Residues (RES)

Residues are Plutonium-contaminated liquids and solids that were once held in reserve at Rocky Flats because they contained Plutonium in sufficient quantities to warrant treatment for recovery of nuclear material. Residues containing hazardous waste are referred to as mixed residues (REM).

Routine Sanitary Waste

This type of sanitary waste is collected in dumpsters located throughout RFETS. Typically these wastes consist of soft or compatible items generated by office/administrative and cafeteria areas and do not require a Radiological Waste Release Evaluation prior to generation or disposal into dumpsters. Typical routine sanitary waste includes: packaging and general office refuse; food waste from cafeteria or offices; non-recyclable paper, cardboard and miscellaneous glass; metal, rubber; and plastic items from routine office/administrative operations.

Special Sanitary Waste

Special sanitary waste is sanitary waste that requires specific treatment, analysis, certification, and/or packaging prior to disposal off site. Special sanitary waste includes non-friable asbestos, filters and filter media, PPE, petroleum-contaminated media, PCB-contaminated media, and Beryllium waste that is not hazardous waste.

Transuranic Waste (TRU)

TRU is any waste (solid or liquid) that is contaminated with alpha-emitting transuranium radionuclides with half-lives greater than 20 years, in concentrations greater than or equal to 100 nCi/g at the time of assay.

Transuranic Mixed Waste (TRM)

TRU mixed with hazardous waste is referred to as TRM.

TSCA Hazardous Waste – Hazardous waste regulated under the Toxic Substance Control Act. This includes primarily PCBs and Asbestos, see related definitions, above.

Additional Waste Related Definitions

Combustibles

Organic materials that are dominantly cellulose (e.g., cotton, paper, cloth, wood, etc.)

Land Disposal Restricted (LDR)

Those RCRA-regulated hazardous wastes that require treatment or applied waste constituent standards to comply with the RCRA regulations before land burial.

Low Specific Activity (LSA). [as defined by 49 CFR 173.403].

APPENDIX C – ECONOMIC DISPOSITION PLAN (EDP)

The requirement for individual and building specific Economic Disposition Plans (EDP) has been replaced with a site wide EDP. The site wide plan is actually the Economic Disposition Plan used for the Building 779 Closure Project, December 1997 (Ref.19) and will be used for the decommissioning of all facilities on site.

APPENDIX D – TRU WASTE ANALYSIS

To be added later

APPENDIX E – ARAR ANALYSIS

The ARAR analysis was completed and appears in the Building 707 DOP (Ref.1) Appendix A.

APPENDIX F – SUMMARY OF DISPOSAL SITE WASTE ACCEPTANCE CRITERIA

WASTE ISOLATION PILOT PLANT (WIPP)

WIPP may receive TRU and TRM for disposal as defined by the WIPP Hazardous Waste Permit, and Waste Analysis Plan (WIPP-WAP), and the WIPP Waste Acceptance Criteria (WIPP- WAC; WIPP-DOE-69).

TRU waste destined for disposal at WIPP is characterized on a waste stream basis. RFETS delineates waste streams using acceptable knowledge. Required acceptable knowledge is specified in Section B-3b and Section B4 of WIPP QAPjP (Ref.8). Once a waste stream has been delineated, a Waste Matrix Code is assigned to the waste stream based on the physical form of the waste. Waste streams are then assigned to one of three broad Summary Category Groups: S3000-Homogeneous Solids, S4000-Soils/Gravel, and S5000-Debris Wastes. These Summary Category Groups are used to determine further characterization requirements.

RFETS ships only those TRU waste streams which have EPA Hazardous Waste Codes already listed on the WIPP Hazardous Waste Permit, Attachment O (NMED 1999). If during the characterization process, new Hazardous Waste Codes are identified, those wastes will not be shipped for disposal to the WIPP facility until the code is added to the permit (refer to the TWMM, Section 5.5.2, Hazardous Waste, and Section 5.5.2.1, Methods of Compliance; 1-PRO-087-WEM-WP-1201, WEMS Container Inventory, Tracking and Control; and 4-G83-WEM-WP-1209, WEMS Waste Package Verification and Certification).

The following TRU waste are prohibited at WIPP and therefore these wastes will not be shipped to the WIPP facility for disposal :

- ❖ Liquid waste (waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container (e.g., 55-gallon drum or standard waste box) may not exceed 1 percent volume of that container). Refer to the TWMM, Section 5.4.1, Liquids; and Section B4-3b(3) of this document.
- ❖ Non-radionuclide pyrophoric materials (refer to the TWMM, Section 5.5.1, Pyrophoric Materials; and Section B4-3b(3) of Ref.8).
- ❖ Hazardous wastes not occurring as co-contaminants with TRU waste (non-mixed hazardous waste). Refer to the TWMM, Section 5.5.2, Hazardous Waste; and Section B4-3b(3) of Ref.8).
- ❖ Wastes incompatible with backfill, seal and panel closures materials, container and packaging materials, shipping container materials, or other wastes (refer to the TWMM, Section 5.5.3, Chemical Compatibility; and Section B4-3b(3) of Ref.8).
- ❖ Wastes containing explosives or compressed gases (refer to the TWMM, Section 5.5.4, Explosives, Corrosives, and Compressed Gases; and Section B4-3b(3) of Ref.8).
- ❖ Wastes with polychlorinated biphenyl (PCB) concentrations equal to or greater than 50 parts per million where the resulting concentration (i.e., below 50 ppm) is not the result of dilution,

or leaks or spills of PCBs in concentrations over 50 ppm (refer to the TWMM, Section 5.5.6, Polychlorinated Biphenyls; and Section B4-3b(3) of Ref.8).

- ❖ Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA Hazardous Waste Numbers of D001, D002, or D003). Refer to the TWMM, Section 5.5.2, Table 5-5, EPA Hazardous Waste Codes Acceptable at WIPP; 1-PRO-087-WEMS-WP-1201, WEMS Container Inventory, Tracking, and Control; 4-G83-WEM-WP-1209, WEMS Waste Package Verification and Certification; Section B1-b of this document; and Section B4-3b(3) of Ref.8.
- ❖ RH TRU waste (waste with a surface dose rate of 200 millirem per hour or greater). Refer to the TWMM, Section 5.3.5, Radiation Dose Rate; and Section B4-3b(3) of Ref.8.
- ❖ Any waste container which has not undergone headspace gas sampling and analysis to determine concentration of VOCs (refer to Section B-3a(1) of Ref.8 and to the TWMM, Section 5.6.4, Flammable VOCs; Section 5.5.5, Headspace Gas VOC Concentrations; and Section 5.6, Data Package Criteria and Requirements).
- ❖ Any waste container which has not undergone either radiographic examination or VE (refer to Section B-3c and Section B1-3 of Ref.8).
- ❖ Any waste container from a waste stream which has not been preceded by an appropriate, certified Waste Stream Profile Form (refer to Section B-1d of this document and WIPP-008, Completion of Waste Stream Profile Form for Waste to be Disposed of at WIPP).

Some of the parameters listed above cannot be assessed visually (e.g., wastes which are corrosive, ignitable, or reactive; or wastes which contain equal to or greater than 50 ppm PCBs). When utilizing RTR or VE, if the waste contains no free liquids, it is acceptable to conclude that the waste is not corrosive, is not ignitable, and is not reactive. The compatibility of waste with packaging material, shipping containers, backfill, etc. is assessed by verification of the TRUCON code. Final characterization of a waste is done in conjunction with acceptable knowledge confirmation.

ENVIROCARE OF UTAH, INC.

Envirocare is authorized to receive mixed wastes for (1) disposal, or (2) treatment and disposal. Mixed waste is defined by Envirocare's RCRA Part B Permit # UTD982598898.

Disposal

Waste generators must complete a Waste Profile for every waste stream that is shipped to Envirocare by using available process knowledge and analytical laboratory results.

Radionuclide Concentration Limits

Envirocare's Radioactive Material License specifically identifies by element and mass number the radionuclides that may be accepted for disposal. Concentration limits in picocuries per gram (pCi/g) are also prescribed for every radionuclide listed in the license. The RFETS-specific radionuclide concentration per the Envirocare of Utah Radioactive Material Limits License # UT 2300249 Category 4-a are below.

	Radioactive Material	Average Concentration		Radioactive Material	Average Concentration
A1.	Americium-241, 243	1.0E04 pCi/g	XX4.	Uranium-235	1.9E03 pCi/g++
DD1.	Plutonium-236	5.0E02 pCi/g	XX6.	Uranium-238	3.3E05 pCi/g++
DD2.	Plutonium-238, 239, 240	1.0E04 pCi/g	XX7.	Uranium-natural	6.8E05 pCi/g++
DD5.	Plutonium-241	3.5E05 pCi/g++	XX8.	Uranium-depleted	3.7E05 pCi/g++

++ Short-lived decay products of U-238 (Th-234, Pa-234m and Pa-234); Np-237 (Pa-233); Plutonium-244 (U-240, Np-240m, and Np-240); and U-235 (Th-231) are assumed to be present in concentrations equal to the parent.

For waste material that contains more than one radionuclide, the waste must be classified by applying the sum of fractions rule described in UAC R313-15-1008(1)(g). The Sum of Fractions requirement in the Radioactive Materials License (Condition 15) has been modified in Amendment #4 (July 21, 1999) to reflect the regulations regarding waste classification. Consequently, generators are no longer required to determine the sum of fractions for all radionuclides listed in the Radioactive Materials License. Only those radionuclides listed in Table I and II of UAC R313-15-1008 need to be included in calculating the sum of fractions.

Special Nuclear Material

Special Nuclear Material (SNM) is defined in the Utah Administrative Code R313-12-3 as: plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235. Each generator shipping waste containing SNM (i.e., uranium enriched in U-235, U-233, Pu-236, Pu-238, Pu-239, Pu-240, Pu-241, Pu-242, Pu-243, or Pu-244) must complete and sign Envirocare's SNM Exemption Certification form (EC-0230-SNM) as part of the waste profiling process.

Acceptable Forms of Radioactive Waste

Envirocare's Radioactive Material License authorizes the receipt of radioactive waste in the form of soil or debris. Condition 56 of the license defines compactable soil as (A) having a graded material that will pass through a four (4") inch grizzly, and (B) as having a bulk density greater than seventy (70) pounds per cubic foot dry weight in accordance with ASTM D-698 (Standard Proctor Test). This same condition defines debris as any radioactive waste for disposal other than soil. Debris includes both decommissioning (cleanup) and routinely generated operational waste including, but not limited to, radiological contaminated paper, piping, rocks, glass, metal, concrete, wood, bricks, resins, sludge, tailings, slag, residues, and personal protective equipment (PPE) that conforms to the debris size requirements.

Prohibited Radioactive Waste

Envirocare is not authorized to receive the follow types of radioactive material for disposal:

- Sealed sources or radioactive material that is permanently bonded or fixed in a capsule or matrix designed to prevent release and dispersal of the radioactive material under the most severe conditions which are likely to be encountered in normal use and handling.
- Radioactive waste containers or bulk shipments which are classified as Class B or C waste.
- Liquid radioactive waste, solid waste containing observable free liquids, or waste which fails the Paint Filter Liquids Test.
- Waste material that is readily capable of detonation, of explosive decomposition, reactive at normal pressure and temperature, or reactive with water.
- Waste materials that contain or are capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste.
- Waste materials that are pyrophoric. Pyrophoric materials contained in wastes must be treated, prepared, and packaged to be nonflammable.
- Waste materials containing untreated biological, pathogenic, or infectious material including contaminated laboratory research animals.

Free Liquid Prohibited

The presence of free liquid within a package or shipment is a significant cause of non-compliance. Shipments of radioactive waste containing free liquids will not be accepted for disposal. Envirocare's license does NOT allow the use of the one percent free water limit authorized by the Nuclear Regulatory Commission (NRC) in 10 CFR 61 or the State of Utah in URC R313-15-1008 (2)(a)(iv).

Acceptable Hazardous Waste Codes

The specific EPA Hazardous Waste Codes that may be received by Envirocare are identified in its RCRA Part B Permit: Envirocare of Utah, STATE OF UTAH PLAN APPROVAL EPA Identification Number UTD982598898. This can be found at website "Envirocareofutah.com."

Prohibited Hazardous Waste

The following hazardous wastes are not acceptable for treatment or disposal at Envirocare's mixed waste facility:

- Hazardous waste that is not also a radioactive waste
- Bulk liquid wastes, non-aqueous liquids, or wastes with an organic liquid phase
- Water or air reactive wastes and materials
- Pyrophoric wastes and materials
- Department of Transportation (DOT) Forbidden, Class 1.1, Class 1.2 and Class 1.3 explosives
- Shock sensitive wastes and materials
- Batteries
- Compressed gas cylinders, unless they meet the definition of empty containers
- Mixed waste where the radioactive portion, at the time of disposal, will exceed the limits set forth in Envirocare's Radioactive Material License
- EPA waste codes F020, F021, F022, F023, F026, and F027; and Utah waste codes F999 and P999

Mixed Waste for Treatment and Disposal

Envirocare may also receive mixed waste that requires treatment in order to comply with the Land Disposal Requirements. Envirocare is approved under the RCRA Part B Permit and the EPA HSWA Permit to operate a mixed waste treatment facility. For mixed waste which requires specific treatment prior to disposal, Envirocare's treatment technologies currently available include:

chemical stabilization (STABL)
chemical oxidation (CHOXD)
chemical reduction (CHRED)
chemical deactivation (DEACT)
neutralization (NEUTR)
macroencapsulation, (MACRO) and
microencapsulation (MICRO)

Additional details on Envirocare waste treatment guidelines can be found in the Envirocare WAC, available at the website "Envirocareofutah.com."

Nevada Test Site

Radioactive Waste Management at the Nevada Test Site

The NTS WAC includes requirements for the generator waste certification, program, characterization, traceability, waste form, packaging, and transfer. The criteria apply to

radioactive waste received at the Nevada Test Site (NTS) Area 3 and Area 5 Radioactive Waste Management Sites (RWMSs) for storage or disposal. Waste will be accepted from generators approved by DOE/NV. The approval process is a series of steps the generator and DOE/NV follow resulting in the generator receiving an approval to ship waste to the NTS. This is described in the NTS WAC Section 2.0, with a flow chart of the approval process found in the NTS WAC Appendix A.

Waste accepted at the NTS must be radioactive and meet the waste form criteria outlined below.

Transuranics

- The concentration of alpha-emitting transuranic nuclides with half-lives greater than 20 years must not exceed 100 nCi/g.
- The net weight of the waste (excluding the weight of the container and shielding) must be used to calculate the specific activity of the waste in each container.
- The following isotopes shall be considered when making the TRU waste determination:
 - 236 Np, 237 Np, 238 Pu, 239 Pu, 240 Pu, 242 Pu, 244 Pu, 241 Am, 242 Am, 243 Am, 243 Cm, 245 Cm, 246 Cm, 247 Cm, 248 Cm, 250 Cm, 247 Bk, 249 Cf, and 251 Cf.

Hazardous Waste

LLW offered for disposal must not exhibit characteristics of, or be listed as, hazardous waste as identified in Title 40 CFR, state of Nevada regulations, or state-of-generation hazardous waste regulations.

State of Nevada regulations require that waste regulated as hazardous in the state of generation must be regulated as hazardous when brought into the state of Nevada.

Free Liquids

- Wastes containing free liquids must be converted into a form that contains as little freestanding and noncorrosive liquid as is reasonably achievable.
- Liquid wastes should be solidified or packaged in sufficient absorbent to absorb twice the volume of the liquid, but liquid must not exceed 1 percent of the volume of the waste when the waste is in a disposal container; or 0.5 percent of the volume of the waste processed in stable form.
- Please note when significant temperature differences exist between the generating site and the disposal site, provisions for additional absorbent materials should be made.

Particulates

- Fine particulate wastes shall be immobilized so that the waste package contains no more than 1 weight percent of less-than-10-micrometer-diameter particles, or 15 weight percent of less-than-200-micrometer-diameter particles.
- Waste that is known to be in a fine particulate form or in a form that could mechanically or chemically be transformed to a particulate during handling and interim storage must be immobilized.
- Secure packaging may be used in place of immobilization. Examples of acceptable packaging are:
 - overpacking (i.e., 55-gallon drum inside 85-gallon drum);
 - steel box, and
 - drums and wooden boxes with a minimum of a sealed 6-mil plastic liner, unless the contents are individually wrapped and sealed in plastic.

Gases

- LLW gases must be packaged at a pressure that does not exceed 1.5 atmospheres at 20EC.

- Compressed gases as defined by Title 49 CFR shall not be accepted. Examples of compliance methods include puncturing aerosol cans and removing the valve mechanism from expended gas cylinders.

Stabilization

- Where practical, waste must be treated to reduce volume and provide a more stable waste form.
- Wastes must not react with the packaging during storage, shipping, handling, and disposal.
- Structural stability can be accomplished by crushing, shredding, or placing a smaller piece inside an opening of a larger piece, such as nesting pipes.
- Chemical stability and compatibility must be demonstrated to ensure no reactions occur and significant quantities of harmful gases, vapors, or liquids are not generated. Specifically when different waste forms are combined in a single waste container.

Etiologic Agents

LLW containing pathogens, infectious wastes, or other etiologic agents as defined in Title 49 CFR shall not be accepted.

Chelating Agents

LLW packages containing unbound (free) chelating or complexing agents which mobilize radionuclides shall not be accepted greater than 1 percent by weight of the waste form.

Polychlorinated Biphenyls (PCBs)

PCB-contaminated LLW shall not be accepted for disposal unless the PCB concentration meets municipal solid waste disposal levels of 50 ppm. Refer to Title 40 CFR, state of Nevada, and state-of-generation regulations for PCB disposal requirements.

Explosives

Waste must not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.

Pyrophorics

Waste must not be pyrophoric. Pyrophoric materials contained in the waste shall be treated, prepared, and packaged to be nonflammable. Pyrophoric materials that are blended in a hardened concrete matrix are considered to be treated to be nonflammable.

Sealed Sources

- Sealed sources shall be segregated from other waste and handled as a separate waste stream.
- Sealed sources shall be characterized on an individual source basis.
- Sources which contain TRU nuclides shall be evaluated against the TRU waste criteria individually, considering only the mass of the source itself (no packaging, extrinsic shielding, or other waste-diluting materials).
- If the source is encapsulated for physical integrity or uniformly distributed throughout a media such as plastic or soil, the capsule or other matrix may be utilized as part of the mass for TRU waste calculations (assuming the source was originally manufactured in this configuration).
- Concentration averaging over integral components of a sealed source is acceptable.

Low-Level Waste Containing Asbestos

- Asbestiform Low-Level Waste (ALLW) is defined as any LLW containing Regulated Asbestos-Containing Material (RACM). ALLW must be packaged, marked, and labeled in accordance with the requirements of Title 40 CFR, state of Nevada, state of generation, and

the NTS Management Plan for the Disposal of Low-Level Waste with Regulated Asbestos Waste, dated August 1996 or subsequent revisions.

- Packages containing ALLW must meet the applicable shipping requirements for the radioactive contents of the package.
- ALLW that is friable or otherwise capable of giving off friable asbestos dust must be wetted and packaged in a plastic bag which is not less than 6 mils in thickness, a combination of plastic bags which equal at least 6 mils in thickness, or a container which is lined with plastic.
- If free liquid is present, absorbent must be added to ensure compliance with the free-liquids criteria.

Diversified Scientific Services, Inc. (DSSI)

DSSI is approved for storage and destruction of RCRA, low level and low level mixed wastes. Wastes from RFETS can include labpack liquids; aqueous and organic liquids and solvents; waste oils and hydraulic oils; and paints. Wastes can contain small quantities of radioisotopes with atomic numbers of 1 through 83, 88, 90, and 92 through 96.

Unacceptable RCRA Wastes include F020, F021, F022, F023, F026 and F027 waste. DSSI cannot accept TSCA regulated material.

Low Level Mixed Wastes which can be treated thermally to produce either a straight Low Level Waste or LDR compliant mixed waste may be a candidate waste stream for treatment at DSSI. When identified, a waste profile for a candidate waste stream is developed and sent to DSSI for review. If treatment through DSSI processes appears feasible, a sample is sent for testing, and if successful, the waste stream will be sent to DSSI for treatment. As DSSI does not have a disposal facility, the treated waste is sent to either Envirocare of Utah or the Nevada Test Site, as applicable.

GTS/Duratek

The Bear Creek Operation is approved for the acceptance, on-site storage, segregation, compaction, and treatment (metal melt) of radioactive-contaminated metal from Site operations. Although the company offers different waste management options, the only processes approved at this time is waste segregation and low level waste metal melting operation.

The facility cannot accept TSCA regulated material, nor medical/infectious wastes. The facility may accept RCRA D008 wastes (lead) that meet the definition of recyclable material in 40 CFR 261.6

Perma-Fix Environmental Services,

Perma-fix is authorized to consolidate, repackage and transport both non-RCRA and RCRA radioactive waste chemicals for off-site management. The facility is also approved for stabilization of wastes associated with the removal of the Beryllium cell from Building 883.

Only wastes containing EPA waste codes approved in the Perma-Fix Part B permit can be shipped. The facility CANNOT accept EPA D002 - Corrosive wastes. All wastes generated from the repackaging and consolidation of chemicals at Perma-fix must be ultimately managed only by K-H approved facilities.

Low Level Mixed Wastes which can be treated through blending or repacking to produce either a straight Low Level Waste or LDR compliant mixed waste may be a candidate waste stream for Perma-Fix treatment. When identified, a waste profile for a candidate waste stream is developed and if treatment appears feasible, the waste stream will be shipped for treatment by Perma-Fix. As Perma-Fix does not have a disposal facility, the treated waste is sent to either Envirocare of Utah or the Nevada Test Site, as applicable.